

What we claim is:

1. A connector for providing electrical connections to wiring on a printed circuit board, comprising:

connector pads disposed within a contact region on the printed circuit board;

an insulating substrate having first and second sides;

contact members disposed within a contact region on the first side of the substrate, the contact region of the substrate being aligned with the contact region of the printed circuit board;

a compression mat having compressor fingers that contact the second side of the substrate in alignment with the contact regions on the first side;

a clamping arrangement that presses the compression mat toward the printed circuit board; and

a restrainer member having holes through which the compressor fingers extend.

2. The connector of claim 1, wherein the substrate comprises a flexible plastic strip.

3. The connector of claim 1, wherein the restrainer member is made of resilient material.

4. The connector of claim 3, wherein the resilient material comprises polyurethane.

5. The connector of claim 4, wherein the polyurethane has a Shore hardness of about A30.

6. The connector of claim 1, wherein the restrainer member is made by depositing a precursor material in a liquid state on the compression mat and then curing the precursor material.

7. The connector of claim 6, wherein the precursor material comprises polyurethane.

8. The connector of claim 1, wherein the restrainer member comprises an injection-molded element that is subsequently attached to the compression mat.

9. A method for electrically connecting connector pads that are disposed within a contact region on a printed circuit board to contact members that are disposed within a contact region on a first side of an insulating substrate, comprising:

(a) bracing compressor fingers of a compression mat with a restrainer member having holes through which the compressor fingers extend;

- (b) placing the contract region of the substrate in face-to-face relationship with the contact region of the printed circuit board;
- (c) positioning the compression mat adjacent a second side of the substrate, with the contact fingers being aligned with the contact members on the first side; and
- (d) pressing the compression mat toward the printed circuit board.

10. The method of claim 10, wherein step (a) comprises depositing a liquid material on the compression mat, and hardening the liquid material to form a resilient body through which the compressor fingers extend.

11. The method of claim 11, wherein the liquid material is a heated polyurethane composition, and the step of hardening the liquid material comprises curing the polyurethane composition at an elevated temperature for a predetermined period of time.

12. The method of claim 11, wherein the liquid material is selected from the group consisting of polyurethane, silicone, and flexibilized epoxies.

13. The method of claim 10, wherein step (a) comprises fabricating the restrainer member from a resilient material, and inserting the restrainer member onto the compression mat.

14. The method of claim 14, wherein the step of fabricating the restrainer member is conducted by injection-molding the restrainer member from a thermoplastic elastomer.

15. The method of claim 10, wherein step (a) is conducted by injection-molding the restrainer member around the compressor fingers of the compression mat.

16. The method of claim 10, wherein the compression mat is made of a resilient material, and the restrainer member is made of a resilient material that is softer than the resilient material of the compression mat.

17. The method of claim 17, wherein the resilient material from which the restrainer member is made is selected from the group consisting of polyurethane, silicone, flexibilized epoxies, and thermoplastic elastomers.

18. The method of claim 10, wherein step (d) comprises tightening fastening members of a clamping arrangement which secures the substrate and the compression mat to the printed circuit board.